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PROTECTION OF THE ATMOSPHERE: OPTIONS FOR AGENDA-21

Report of the Secretary-General of the Conference

INTRODUCTION

1. This paper was prepared by the Secretariat in response to the decision of the Preparatory Committee at its second session, in which the Secretary-General was requested "...to investigate further the interconnections between the issues of climate and environmental and developmental...and cross-sectoral issues, and to report to the Preparatory Committee at its third session, in order to enable it to consider at that session the preparation of related proposals for discussion at the United Nations Conference on Environment and Development". 1/

2. As explained in the background paper 2/, the main atmosphere issues are linked to each other, to other issues, and to sectors. Background papers on Transboundary Air Pollution 3/ and on the Protection of the Ozone Layer 4/ have now been prepared. As the key sources of climate change, and other atmosphere-related problems are the sectors using and converting fossil fuels, the major response options lie in this area. This paper suggests possible response options for Agenda-21, concentrating on the energy sector. Options for areas, such as Oceans, Forests, Agriculture and Water are available in other papers prepared for the Preparatory Committee.

3. Energy is necessary for development. Its production and use, however, are the sources of the most serious local, regional and global environmental problems, and consequently are constraints to sustainable development. The

overall environment-development objective requires that sufficient energy be available in forms that are environmentally sound. Energy efficiency measures, the promotion of environmentally sound energy systems, and programmes to reduce wasteful energy consumption patterns are essential in the achievement of these objectives.

4. It is recognized that some of these objectives cannot be accomplished overnight, especially in the developing countries. Current energy consumption levels are so low in some of them that increased energy use will be essential, even to attain basic standards of economic welfare.

5. The paper starts with overall Atmosphere-wide Objectives, followed by five Proposed Programme Areas. A number of actions are listed under each programme area. More details concerning these actions will be developed by the fourth session of the Preparatory Committee. Many of the objectives referred to in this paper will either be negotiated by or coordinated with the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change. Close cooperation of the UNCED preparatory process with the INC process, thus continues to be important.

6. There needs to be sufficient funds available, especially for the developing countries, to enable the transition to a more sustainable energy future, especially through capacity building, technology development and transfer. New ways of raising large amounts of funds need to be found, and existing financial institutions need strengthening. Some of these issues are dealt with in this paper, under each of the proposed programme areas. Others are dealt with in the cross-sectoral papers prepared for the Preparatory Committee on financial resources and technology.

ATMOSPHERE-WIDE OBJECTIVES

7. Some of the atmosphere-wide objectives are now under negotiation in other fora. Their full quantification needs to wait for these processes to conclude. However, actions which could contribute to those objectives can be initiated even now. Other, longer term objectives will need to be developed by the Preparatory Committee.

GHG/Ozone Depleting Substances Emissions Limitations

8. Commitments for greenhouse gas emissions and sinks, as negotiated by the Intergovernmental Negotiating Committee.

9. Commitments for ozone-depleting substances, as negotiated and agreed under the Montreal Protocol.

Reducing Air Pollution

10. Commitments for emissions of SOx, NOx, and VOCs, as exemplified by the protocols to the Convention on Long Range Transboundary Air Pollution (LRTAP), and further efforts for reducing emissions of toxic heavy metals and persistent organic compounds.

11. Development of authoritative guidelines for ambient air quality, taking into account human health risks and, as appropriate, other environmental risks of major air pollutants.

12. Efforts by developing countries to reduce human exposure to excessive air pollution (including indoor) from domestic biomass and fossil fuel burning, especially as it affects women and children.

PROPOSED PROGRAMME AREAS:

13. The following major energy-related programme areas are proposed as options for consideration by the Preparatory Committee;

PROMOTING THE ENERGY TRANSITION
INCREASING ENERGY EFFICIENCY
PROMOTING ENVIRONMENTALLY SOUND ENERGY SYSTEMS
PROMOTING SUSTAINABLE ENERGY CONSUMPTION PATTERNS AND LIFE STYLES
ADDRESSING THE UNCERTAINTIES: THE ATMOSPHERE

14. Each of these will help in the achievement of one or more of the Atmosphere-wide Objectives, as well as for other issues. Within each programme area, a number of actions will need to be undertaken. A number of these need to be undertaken for more than one programme area.

A. PROMOTING THE ENERGY TRANSITION

Basis for Action

15. A number of actions will be required to support the overall transition to a more sustainable energy future, independent of the fuel source, or the energy consumption sector concerned.

Objectives

16. Countries and international organizations could take steps to ensure that data and information required for the energy transition will be developed, and made available.

17. Countries and international organizations could ensure the availability of capacity, especially in developing countries to undertake the necessary technical, research, development and implementation measures.

Activities

18. National Energy-Environment Accounts are key prerequisites for understanding the energy system, and preparing policy interventions for increased energy efficiency, and other energy sector activities.

a. Country-level energy-environment accounts, coordinated at the regional level, as appropriate, could be developed, and made widely available [by 1995-1997].

b. Countries could make available by the same dates, detailed studies of the costs of different energy paths, particularly in respect of greenhouse gas reduction strategies.

c. The relevant United Nations bodies could coordinate the development of methodologies for country-level integrated energy-environment accounting, promoting harmonized data presentation and analysis.

19. Least-cost Energy Planning can be useful for making cost-effective choices.

a. Least-cost energy planning could be adopted by countries, and promoted in the private sectors using real cost prices, with a longer term aim of using full economic and environmental costs.

20. Pricing and other Economic Mechanisms will be essential elements:

a. Governments and United Nations and other international organizations could, in collaboration with the private sector, promote policy research on, and implementation of, measures to achieve energy-related objectives by utilizing market, competitive and pricing mechanisms (e.g taxes, tradeable entitlements, incentives and disincentives, etc.), and could exchange information on the relative effectiveness of various policies and techniques.

21. Education and Information concerning the role of, potentials for, and different possibilities of energy efficiency are crucial, both at national and international levels.

a. Education and awareness raising programmes concerning energy efficiency, environmentally sound energy systems, could be introduced or intensified in all countries.

b. The relevant United Nations bodies, in cooperation with Governments and NGOs, could intensify efforts at collecting, analysing and disseminating to key target groups relevant information.

22. Capacity building will be crucial to allow developing countries to develop and implement environmentally sound energy technologies and system, at local regional and national levels.

a. The relevant United Nations bodies and international donors, in cooperation with Governments and NGOs, could provide substantially increased technical and financial assistance to developing countries to building up their technical managerial, planning and administrative capacities to enable them to develop, and implement environmentally sound energy systems.

23. Changes to Existing and New Mechanisms of technical and financial assistance are needed at national, regional and global levels. Within the

United Nations, as there is no lead agency responsible for energy, there are two options: strengthening of the existing, diverse capacities, and creating new coordinating or implementing institutions.

a. The United Nations could mandate an independent, high-level energy efficiency commission, to undertake advocacy role at the international level on energy efficiency and environmentally sound energy systems.

b. United Nations System activities presently dealing with energy need to be strengthened, to ensure that efforts are concentrated on increased environmentally sound energy system utilization.

c. The United Nations could set up a new institution to deal with energy. A number of options are possible, including:

(1) United Nations Energy Co-ordination Unit, with small secretariat, improving coordination of energy-related activities;

(2) Central United Nations Energy Programme, with modest funding, with catalytic, coordinating role;

(3) Central United Nations Energy Agency, with large funding, undertaking the whole spectrum of energy-related activities;

d. Relevant United Nations bodies could set up "collaborating centers" with existing or new governmental or non-governmental institutions to assist countries and United Nations agencies to implement environmentally sound energy activities.

e. Countries could ensure that public financial institutions, at the national and international level, review their programmes to determine the extent to which the are contributing to or promoting investments that encourage the use of environmentally sound energy systems.

B. INCREASING ENERGY EFFICIENCY

Basis for Action

24. While energy efficiency is now widely regarded as a key area for action in all countries, and because it has the technical potential for producing quickly, multiple and permanent environmental and economic benefits, it has to be pursued much more vigorously than hitherto.

Objectives

25. Each country could increase its institutional capacities and policy focus to support the management of energy demand and, where appropriate, the reduction of fossil fuel use or its growth per unit of output in the major energy-using sectors.

Activities

26. Setting targets and developing legislation, regulations and other institutional arrangements will be crucial for promoting energy efficiency, and environmentally sound energy systems, both at the national and international levels.

a. Countries could set energy efficiency standards on specific technologies and for economic sectors, as appropriate. These could be coordinated at regional levels, where relevant.

27. The transport sector raises in particularly acute form the conflicts between energy, environment and development and the wide ranging responses that might be applied to them. Given the importance of the automobile as an energy (fossil) user, and as a major polluter, automobile efficiencies and emissions must be the focus.

a. The relevant United Nations bodies, in cooperation with regional organizations could invite, through an international conference, major motor vehicle [aircraft and ship] manufacturers to agree on progressively increasing fuel performance and emission standards, to be harmonized between different transportation sectors where appropriate.

b. Countries could set up their own national fuel performance and emission standards, to be coordinated regionally or globally, as appropriate, and to be compatible with internationally accepted criteria and norms.

c. Countries could introduce, or strengthen pricing, and other economic mechanisms, which discourage large fuel-consuming and polluting vehicles and encourage alternative fuels.

d. Countries could review the means at their disposal to promote more efficient and less polluting mass transit, and prepare appropriate plans to implement these.

e. Countries could promote life styles and economic activities which require less travel, through improved telecommunications, and appropriate spatial redistribution of living/working space.

C. PROMOTING ENVIRONMENTALLY SOUND ENERGY SYSTEMS

Basis for Action

28. Most of the energy produced and used today is done in unsustainable ways. We must move toward a transition to Environmentally Sound Energy Systems (ESES). On the one hand, we must use the conventional energy sources, such as fossil fuels, nuclear energy, traditional biomass, etc., in ways which respect the environment. There is a considerable scope for improvement in all the sectors. More importantly, we must pursue vigorously the path to increased reliance on renewable, environmentally sound energy systems.

Objectives

29. The long-term objective is to implement an energy transition from the present fossil-fuel-based culture to one relying on environmentally sound energy systems (ESES). During the transition, fossil fuels will continue to be important. It is essential that new developments employ the most efficient and least polluting technologies.

30. Countries could set objectives of increasing the percent and absolute contribution of ESES to the supply mix. Regional and global indicative targets could also be set, and national and international figures for reliance on ESES could be made available. Countries could also set objectives for increasing reliance on specific renewable ESES, such as biomass, or solar.

31. An additional objective is to increase the amount of money devoted to research and development for ESES, both in absolute terms, and relative to the amount spent on conventional energy. The long-term objective is to reverse the present trends where most money is spent on conventional energy systems.

Activities

32. Setting Targets in the renewable ESES area will be crucial for success, both in terms of the desired level of use, and in terms of financial and other commitments of Governments to reach those targets.

a. The relevant United Nations bodies, in cooperation with Governments and NGOs could develop mutually agreeable criteria, on a national or regional scale, as appropriate, for the classification of energy systems as environmentally sound (ESES).

b. Following evaluation, countries could classify their energy supply systems, and set up targets for ESES's contribution to the overall supply mix, both in absolute and in percentage terms.

c. Countries, as well as regional and international bodies, could agree to review research priorities to ensure substantially increased funding to research and development on ESES, particularly on renewable energy systems, to a level where ESES receive the majority of R&D funding by [2000].

d. Developing countries could promote alternatives to fuelwood, where it's use causes unsustainable environmental stress.

D. SUSTAINABLE ENERGY CONSUMPTION PATTERNS AND LIFE STYLES

Basis for Action

33. Basic energy service needs of a large number [, millions] of people are not being met. There must now be a concerted effort to provide everybody with sufficient energy services for sustainable livelihoods.

34. At the same time, some of the critical global and regional environmental problems stem from an overuse of energy. While there is no "energy shortage" as such, the overall price (environmental, extraction, political, etc.) we have to pay for additional energy supplies is increasing, and there are plenty of reasons why limiting consumption of energy resources will have beneficial impacts. Consequently, there is need for rationalizing and containing energy consumption at the global level.

Objectives

35. Countries could develop indicators for Basic Energy Service Requirements, make them an integral part of conditions for sustainable livelihoods, and develop plans for everybody to have access to these.

36. Countries could develop indicators for [Maximum] [Sufficient] Energy Service Requirements, and plans to not go beyond these requirements.

Activities

37. A number of actions will be required, both to increase access to energy services for some, and reduce overall consumption levels of others. Many of the actions outlined in the "Energy Efficiency" section would also be useful for consumption reduction strategies. In addition:

a. Countries could immediately undertake end-use energy surveys, to establish indicators of Basic and [Maximum] [Sufficient] Energy Service Requirements, and the number of people, households, industries, who are below and above. The information could be made widely available.

b. Countries could develop and implement programmes, with assistance from the relevant United Nations bodies, regional organizations, donor agencies, and NGOs to ensure that in a given time-frame, everybody has access to the basic requirements.

c. Countries could introduce incentives to reduce the number of people, households, industries who are above the [Maximum] [Sufficient] Energy Service Requirements.

d. Countries could support initiatives promoting clean technologies, waste minimization and recycling with a view to reducing energy consumption and greenhouse gas emissions.

E. ADDRESSING THE UNCERTAINTIES: ATMOSPHERE

Basis for action

38. Substantial knowledge of the atmosphere has been gained through international cooperation and exchange of data and information to all nations. However, concern with climate change, air pollution, and ozone depletion has created new demands for scientific information. Better understanding of physical and chemical properties of the atmosphere is needed,

through expanding and strengthening research programmes, developing comprehensive observing systems to monitor the atmosphere and the climate system as a whole, and to detect trends, variations and changes of the atmospheric behavior in a timely manner.

Objectives

39. Countries could agree to promote cooperation in conducting research to improve the understanding of the physical, chemical, biological, economic and social processes that influence the Earth's climate system (e.g., oceans, land, atmosphere & biosphere) at global and regional scales.

40. Countries could agree to promote developing and maintaining systematic observations of the climate system, in particular through the Global Climate Observing System (GCOS).

41. Countries could agree to preserve, and collect data and information on the atmosphere and the climate system as a whole, and to exchange these data and information to the fullest extent possible.

Activities

a. The relevant United Nations bodies, in cooperation with Governments, industry, research institutions, and NGOs could identify priority areas of scientific, technical, and socio-economic research and particularly the critical linkages to atmosphere and climate needed to support decision making, and ensure implementation.

b. Countries could promote process of free, unrestricted exchange of data and information related to the atmosphere and climate.

c. The relevant United Nations bodies, in cooperation with countries and NGOs could promote cooperation in the development of early warning systems concerning changes in the climate system.

Notes

1/ Decision 2/8 of the 3rd session of the UNCED Preparatory Committee (A/46/48).

2/ Protection of the Atmosphere: Sectoral Issues (A/CONF.151/PC/xx).

3/ Protection of the Atmosphere: Transboundary Air Pollution (A/CONF.151/PC/xx).

4/ Protection of the Atmosphere: Protection of the Ozone Layer (A/CONF.151/PC/xx).